

# Chapter 9

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## EMERGENCY CARE

### Emergency Procedures

#### Emergency Procedures: Allergic Reaction

#### Emergency Procedures: Heat-Related Illness

#### Emergency Procedures: Cardiac Arrest

#### Out-of-Hospital Do Not Resuscitate Orders

#### Secondary Prevention: Crisis Management and Responding to School Violence



## Emergency Procedures

Schools and school districts must be prepared to deal with emergencies. The first step in being prepared involves developing written policies to guide the school personnel response to emergencies. Schools should have a current, written plan for emergency care of a student or staff member experiencing a crisis that requires immediate attention. Written plans are an integral part of a comprehensive school health plan.<sup>1</sup>

A health emergency may occur in any school at any time; children can become seriously ill or injured in a number of settings, including the playground and the laboratory. Children in school are also at risk for violence-related injuries. Additionally, as more children with special health care needs are integrated into community schools, there is an increasingly real possibility that these children will need emergency care. School staff need to be trained and knowledgeable about this response—at minimum, they need to ensure that students and/or staff get timely and appropriate emergency medical services when needed.<sup>2</sup>

Emergencies may be classified into three categories:

1. **Life-threatening or potentially disabling.** These types of emergencies can cause death or disability within minutes, and therefore require immediate intervention, medical care, and usually hospitalization.
2. **Serious, or potentially life-threatening or disabling.** Because these may soon result in a life threatening situation or may produce permanent damage, they must be treated as soon as possible.
3. **Non life-threatening.** These are identified as any injury or illness that may affect the general health of a person, for example: fever, stomachache, headache, seizures, broken bones, cuts etc. The person should be evaluated as soon as parents can be notified or within a few hours at maximum.<sup>3</sup>

Exhibit 1 at the end of this section provides an emergency categorization chart that can be copied and used by schools in developing their emergency response plan. Exhibit 2 contains general guidelines to be followed in case of an emergency.

## The Law

### First Aid

Texas law stipulates that if health services are going to be delivered in schools, this must be done by licensed professionals. Specifically, § 21.003(b), Education Code, states that:

A person may not be employed by a school district as an audiologist, occupational therapist, physical therapist, physician, nurse, school psychologist, associate school psychologist, social worker, or speech language pathologist unless the person is licensed by the state agency that licenses that profession. A person may perform specific services within those professions for a school district only if the person holds the appropriate credential from the appropriate state agency.<sup>4</sup>

Section 22.052, Education Code, specifically exempts the administration of medication from the above-described services, authorizing any school district employee to perform this task, as long as parental consent and the original container of medication are obtained. (For further discussion, see Chapter 5, *Medication Administration*).

“Minor first aid,” according to the legal subcommittee of the Texas School Health Task Force (SHTF), is the second service that unlicensed personnel may perform in schools or at school-related events.<sup>5</sup> Additionally, § 74.002, Civil Practice & Remedies Code (the “Good Samaritan Law,”) protects unlicensed personnel from civil liability if they administer emergency care in “good faith.” (See Appendix A for the entire text of Chapter 74). Specifically, § 74.002 reads:

Persons not licensed in the healing arts who in good faith administer emergency care as emergency medical service personnel are not liable in civil damages for an act performed in administering the care unless the act is willfully or wantonly negligent. This section applies without regard to whether the care is provided for or in expectation of remuneration.<sup>6</sup>

Schools districts should work with their legal counsel to develop policies regarding who should deliver first aid in emergencies. Physician’s standing orders can be used to provide direction to personnel during an emergency. § 21.003(b), Education Code, “could be interpreted to include unlicensed health personnel performing school health services

properly delegated and supervised by a licensed health care professional authorized to delegate those services.” The legal subcommittee of the SHTF believes these professionals to be “limited to 1) physicians delegating in accordance with the Medical Practice Act and BME rules and 2) registered nurses delegating in accordance with Nursing Practice Act and BNE rules.”<sup>7</sup> Additionally, the Education Code explicitly mandates that athletic coaches and sponsors be trained and certified in provision of first aid (see below). See Exhibit 3 of this section for a brief legal discussion of physician’s standing orders.

If a school chooses not to use standing orders, compliance with Chapter 74, Civil Practice & Remedies Code, will protect unlicensed school district employees who are not under delegation orders, as long as their efforts are in “good faith.” Appropriate supervision by school administrators and/or health care staff, along with training and certification in first aid and/or cardiopulmonary resuscitation (CPR) can strengthen the employees’ “good faith” efforts. Nurses and other licensed health care professionals employed by school districts may wish to maintain certification in first aid and CPR, since Chapter 74 does not provide them with immunity from professional liability. See Exhibit 4 of this section for first aid and CPR training resources.

### **CPR**

Section 33.086, Education Code, states that:

- (a) A school district employee who serves as the head coach or chief sponsor for an extracurricular athletic activity, including cheerleading, sponsored or sanctioned by a school district or the University Interscholastic League must maintain and submit to the district proof of current certification in first aid and cardiopulmonary resuscitation issued by the American Red Cross, the American Heart Association, or another organization that provides equivalent training and certification.
- (b) Each school district shall adopt procedures necessary for administering this section, including procedures for the time and manner in which proof of current certification must be submitted.

Schools districts must establish their own policies around this legislative mandate. This may include expanding the number of staff and positions that will be certified in CPR.

The following text of this section offers suggestions for schools on how they can develop these policies.

## **The School's Role**

School administrators, in consultation with the school nurse and school physician (a pediatrician or other physician knowledgeable about child and adolescent health, and school health care), should develop policies and guidelines for emergency situations occurring on their property and at school-related events. In general, these policies should reflect three things:

- The school's role in preventing and reducing the risk of emergencies and injuries involving their students and staff;
- The school's preparedness in coping with an emergency, including staff training and instruction, and the availability of emergency-related equipment; and
- How the school will communicate the incident, both internally (i.e., record-keeping), and externally (i.e., to parents and other healthcare personnel).

The following sections will discuss these three components of emergency planning; schools may wish to use this discussion as a guideline in planning their own specific policies. In addition, school boards and districts can review guidelines from other states and regions.

## **Step One: Emergency Prevention and Risk Reduction**

### **School Emergency Committee**

Every school system should appoint a "school emergency" committee to perform an annual risk assessment. Members of this committee should include the district health services coordinator, administrators, athletic coaches, students, custodians, and community hospital representatives, among others.<sup>8</sup> This assessment should include a safety review of the building and property, an evaluation of the health care staff available at the school (number of staff, education, qualifications etc.), and a review of the type of emergencies that occurred in the school or region over the past year and how they were

handled. The committee should present their findings and recommendations to the principal and/or school board. This committee, for example, could review the Health Services plan for responding to emergencies.

### **Safe Curriculum**

School personnel can include safety and accident prevention in their regular curriculum. For example, a written policy aimed at reducing the incidence of acute asthma episodes can be applied in the classroom with specific lessons about the effects of chemicals or fumes from art supplies. Safety lessons for students must be tailored to their age(s) and developmental level(s), but all ages can be successfully introduced to the concepts of personal safety and environmental awareness by adults that they know and trust.

Lessons and emergency prevention planning can be developed for the type of emergencies that commonly confront students. For children in grades K-6 these situations include: traffic, bicycle, water, playground, fire and personal safety. Teachers, nurses, and other health care staff, and even school administrators, can introduce and model healthy behaviors.<sup>9</sup>

Middle-school children are more likely to encounter sports-related injuries, bicycle safety issues, and aggression. Students at this age are able to absorb facts and figures, but have a limited interest in this approach to safety and emergency prevention. Adventure-based curricula offer one way to provide opportunities to learn decision making and cooperative skills. Students can be offered the opportunities to act as role models for younger students at the school, and they can be taught tools to help them to “master their environment,” such as learning cardiopulmonary resuscitation (CPR). Guest speakers respected by children (e.g., older students, athletes, professional emergency personnel) are another way for schools to be creative in partnering with the community *and* their students to work toward reducing the occurrence of accidents and emergencies at school.<sup>10</sup>

Adolescents are at greater risk for occupational or sports injuries, motor vehicle accidents, relationship violence, homicide, and suicide. In the adolescent’s transition to adulthood, risk-taking behavior is a common way of coping with the developmental task of autonomy associated with this age. Adolescents are more likely to adopt safety and positive health behaviors learned from adults if: 1) they perceive themselves to be vulnerable to injury or emergency; 2) they believe themselves capable of taking

preventive or remedial action; and, 3) they believe the necessary action is socially acceptable (e.g., avoiding a popular food that is capable of causing an anaphylactic reaction). They must recognize the pressures that lead them toward risky behaviors while gaining the skills and motivation necessary to resist those risks.

The following tips are helpful when working with adolescents:

- Provide information on safe choices. Focus on the topics most meaningful to them, and avoid scare tactics.
- Talk with adolescents, not at or over them. For example, telling young adults not to drink and drive will be more effective if there is room for them to discuss the social pressures and environment related to this topic.
- Do not make them feel embarrassed about what they do not know.
- Use examples, stories and guest speakers rather than statistics.
- Emphasize that knowledge is power, that choosing safety can make them feel stronger and more in control.
- Reinforce positive choices adolescents have made.
- Provide written materials to supplement verbal messages. Keep materials simple and culturally appropriate.
- Be a role model. Do as you say.
- Offer opportunities for adolescents to develop leadership skills to be used among their peers and in activities with younger children.<sup>11</sup>

## **Step Two: Emergency Readiness**

School personnel must be prepared to cope with a variety of life-threatening situations. School districts must develop and maintain an emergency plan tailored to their needs, and all personnel must be familiar with the plan and their role. Components of this plan can include, but are not limited to:

### **Names and Numbers**

Every school district should identify the persons authorized and educated to make decisions when health emergencies occur. Names, telephone numbers, and locations of these persons should be provided to all staff members, and this list should be updated regularly. Every staff person and person affiliated with the school should have a clear understanding of “who to call” (and how and where to call them). The communication of



this knowledge to school staff should be part of the school or district's emergency plan.<sup>12</sup> In addition, ambulance, police, fire departments, and poison control center phone numbers should be posted near telephones and reviewed annually with staff members.<sup>13</sup>

### **Procedures and Forms**

School staff must know how to contact EMS; how to contact the affected student(s) parent or guardian; what forms and/or paperwork should be on file for affected students and how to access it; where to move other students and what to tell them; and who can transport a student to emergency care.

Each student and staff member should have an emergency card with current information on file. These cards should be reviewed annually prior to the start of each school year and should be revised immediately when changes occur. The cards should be kept in a secure, centralized place, but accessible to designated staff in case of emergency. They should be signed by parents or guardians and include: pertinent medical history, important notification telephone numbers, and any special instructions. A letter should be sent to the school community regarding the importance of maintaining up-to-date medical files with the school. (**Note:** These forms do not replace the Individualized Healthcare Plan (IHP) that should be in place for any child or student with a special health care need. See Chapter 7, *Treatments and Care Plans*, for more information about IHPs.)

Forms that schools should use include:

- Student Emergency Card
- Parent/Guardian Release Form
- Faculty Emergency Card
- EMS and Hospital Information
- Incident Reporting Forms<sup>14</sup>

Schools can create their own forms and add to the above list as needed.

### **Identify Key Staff Positions and Personnel**

Ideally, the school nurse in each building should be the key person to implement the emergency plan because the nurse is most familiar with the health problems of the

students, as well as with community resources. The District Health Nurse Coordinator is a key player in developing each school nurse's responsibility and in developing procedures for the district. Additionally, athletic trainers and other athletic staff members educated in sports medicine and emergency care should be prepared to handle emergencies related to participation in athletics (see "Cardiac Arrest" section of this chapter). In addition to these two roles, schools and districts (particularly those without a nurse) may wish to consider identifying other staff (e.g., principal, cafeteria staff, bus drivers) that can receive specialized training in handling emergency situations.

### **Educate and Train**

Not all Texas schools have a school nurse or physician, and in schools where one (or both) exist, they may not always be immediately available in an emergency. For this reason, two or more members of the school staff should be identified and educated to handle emergencies, according to established policies and guidelines, until the nurse, physician and/or other emergency personnel arrive. Education of those individuals selected should include first aid, basic life support, and the recognition and treatment of anaphylaxis. The school nurse, physician, or both, should supervise the education and activities of these staff members. Education should be on a voluntary basis with certificates provided. Periodic retraining in association with a current certificate of participation should be required to assure competence.<sup>15</sup> Specific education of these individuals should include:

**Nurses.** All nurses should be educated in emergency care through a program developed by physicians, nurses, emergency medical technicians, and others with special education in emergency care. This education should include basic life support, first aid, the use of metered-dose inhalers and nebulizers, and appropriate treatment for any student or staff member experiencing an anaphylactic reaction in school.<sup>16</sup>

**Athletic Coaches and Staff.** Coaches in Texas are required to be certified in cardiopulmonary resuscitation (CPR). Schools may wish to direct them to educate the remainder of their staff.

**Unlicensed Healthcare Personnel (UHP) and Other Staff.** Schools and districts may choose to identify other staff members for emergency training, ensuring compliance with federal, state and local legislation requiring such training. Section 22.052, Education Code, suggests that non-nursing staff are

allowed to provide minor first aid (see above).<sup>17</sup> Schools may wish to develop policies that clearly articulate what is allowed, in addition to who will supervise and monitor this training.

**Students.** Emergency life-saving courses can be taught to students in school. One recommended curriculum is the “Basic Emergency Lifesaving Skills (BELS): A framework for teaching emergency lifesaving skills to children and adolescents,” created and published by the Health Resources and Service Administration. The course should be supervised by a pediatrician or other health care professional with the appropriate pediatric emergency expertise (e.g., a pediatric nurse practitioner).<sup>18</sup> See the Resources list in Exhibit 4 for this curriculum.

### **Readiness to Provide First Aid**

A complete emergency kit should be kept in a secure location designated for medications in each school, and these kits should be readily available to educated staff volunteers and emergency care designees. A protocol for updating and monitoring the kit should be established. Autoinject epinephrine should be available by individual prescription for students and/or staff members with a history of severe allergy or anaphylaxis (see “Epinephrine Protocol” in Chapter 5, and “Allergic Reaction” in this chapter for further discussion). The contents of the kit should be determined by the school health professionals, who should receive input from other staff members familiar with emergency care at each school, e.g., the school emergency committee. Additionally, a current and complete first aid manual should be available to school nurses, athletic staff, and other unlicensed health care personnel authorized to provide minor first aid. The contents of the kit, the list of designated providers, the manual, and the written procedures and protocols should be reviewed annually. See Exhibit 5 of this section for suggested contents of a first aid kit.

The school nurse should be certified in cardiopulmonary resuscitation (CPR) and provision of first aid, and also certified to teach both. Classes should be made available to all interested staff on a regular schedule, which can be determined by school need.<sup>19</sup> All staff should be educated about emergency response guidelines developed by school administrators and the health care team. Education about immobilization of the cervical spine, airway management, and rescue breathing should be a part of this training. Staff members should also be encouraged to obtain additional training when possible.<sup>20</sup>

All staff should be educated in the use of universal precautions, and every school should comply with regulations of the Occupational Safety and Health Administration (OSHA) for bloodborne pathogens, including the onsite availability of exposure control plans. The school nurse should provide inservice to all staff in this area on an annual basis. The Bloodborne Pathogen Exposure Plan should be written for each school district. See Exhibit 6 for sample universal precautions guidelines.

### **Calling for Help**

Procedures should be in place to summon help in emergency situations from local emergency medical service professionals and, where available, the 911 system. All school staff should be familiar with how to activate the Emergency Medical System (EMS) in their area, and designated emergency care staff should be familiar with the situations in which EMS needs to be activated. Schools should develop clear protocols regarding the activation of EMS. School staff need to be clearly instructed to avoid treating beyond their skills, and to activate EMS when in doubt.

### **Activate EMS if there is:**

- A breathing problem
- Severe bleeding
- Anaphylactic reaction (shock)
- Burns (serious or covering a large area)
- Head, neck, or back injury
- Concern about a heart problem
- Poisoning
- Loss of consciousness
- Seizures, more than one (see “Seizure Disorder” in Chapter 7 of this manual)
- Serious limb injury or amputation
- Penetrating injury or impalement
- Foreign object in throat.<sup>21</sup>

A strong link between the school and emergency providers promotes optimum response and intervention in an emergency. It is important to communicate with EMS prior to an emergency about:

- Capabilities of service in the school's area
- Point of entry hospital
- Average emergency response time to the school
- Directions to (principle and backup), and a plan of the school

### Transport

Questions about transport should be discussed before an emergency occurs. No ill or injured student should be sent home alone or accompanied by another student. Any decision to transport a patient from school should be well documented in that student's school record. Transport questions to be answered include:

- Under what conditions can a patient be transported by a family member or designated contact?
- If EMS is needed, who from the school can accompany the patient to the hospital?
- What prior arrangements for accompanying the patient need to be made with EMS?
- Who at the school will confirm the patient's destination with EMS prior to their departure?
- What school health documents need to accompany the patient when transported?
- Who notifies the parents/guardians and when?<sup>22</sup>

The Texas Education Agency, in their *School Nurse Handbook for the School Health Program*, recommends the following:

The nurse and/or other designated school personnel, with the emergency card, should accompany the student to the hospital and remain until the parent/guardian assumes responsibility. If a private car is used, two adults should be assigned, allowing one person to attend to the injured person.<sup>23</sup>

School readiness involves all school personnel, from school board administrators to the students themselves. Preparedness is a commitment on the part of schools and school boards to comprehensively care for students. A well-established emergency plan signifies

to parents/guardians and the school community that a school is ready, willing, and able to handle emergencies. Emergency readiness planning should culminate in the majority of school personnel being able to perform the following tasks:

- Recognize that an emergency has occurred;
- Provide immediate first aid care;
- Contact the local EMS; and
- Notify the parent/guardian, or person identified as the emergency contact.

### **Step Three: Communication**

Record keeping and documentation must include every reportable school-related incident or emergency. They are also important in the settlement of insurance claims, the protection of school personnel against charges of negligence, and the planning of prevention programs. A reportable incident should be defined, in advance, at the school district level. The definition should be based on the best judgment of school authorities, school health professionals, community health organizations, and public safety officials.

Forms should be developed by the school to facilitate the inclusion of all necessary content, including:

- Name, address, telephone number and date of birth of the patient(s).
- Parent/guardian or contact person's name, address, and telephone number.
- Date, time, and place of injury (e.g., what classroom, building).
- Brief description of injury or illness.
- Person in charge when injury or illness occurred.
- Activity or circumstances at time of injury or illness.
- A list of witnesses, if any.
- Type of treatment given at the school.
- Record of transport.
- Name, address, and telephone number of receiving hospital or health care provider.
- Additional treatment given at the hospital or by the primary health care provider, if known.
- Record of parent/guardian notification.

- Name of person who prepared and filed the report and the date.
- Names of corroborating individuals (students, teachers, etc.).

The report should be completed by either the school nurse or someone designated by the school nurse or administrator(s); preferably, it will be someone who was present during the emergency. The report should be completed and filed within 24 hours after the incident has occurred with the appropriate agencies and offices, according to school district policy. Notification of serious illness or injury should be made on the individual's school medical record, and a copy of the incident report should be included. School health care personnel should periodically review incident reports and discuss any patterns noted with administrators and with the school emergency committee, so that appropriate preventive measures can be instituted.<sup>24</sup>

## **Emergency Procedures: Allergic Reaction**

(Please note: readers of this section should also read the “Special Topic – Epinephrine Protocol” in Chapter 5, *Medication Administration*, of this manual.)

An allergy is a systemic or local reaction to one or a combination of environmental or physiological factors. Persons with allergies react to these factors as “triggers,” with a dysfunctional immune system response, often through the production of an immunoglobulin (IgE). IgE, when confronted with the presence of a “trigger,” or allergen (e.g. casein, a milk protein), initiates a process that includes cell degranulation and histamine release. This process can result in symptoms as mild as a sneeze or watery eyes to life-threatening allergic anaphylaxis. It is unusual for a person to have a reaction the first time they are exposed to an allergen (the body produces IgE in part as a reaction to having encountered the allergen before in a process called sensitization). However, sensitization to an allergen can occur without overly noticeable signs or symptoms and from minute amounts of the allergen.<sup>25</sup> Therefore, all people are at risk for an anaphylactic reaction to an allergen, whether or not they have a history of allergy problems or symptoms.

All children should be assessed for the presence of any type of allergy history, and environmental, behavioral, and dietary modifications should be made to avoid contact

with known allergens. Staff members involved with the child's care must be instructed about the potentially severe nature and proper treatment of the allergic problem. An emergency care plan (ECP) should be on file for every child with a history of severe allergic reaction. Review of this information should occur prior to the new school year or special activities (e.g., field trips).<sup>26</sup> Exhibit 7 of this chapter contains a sample allergy ECP.

## **The School's Role**

Schools can prepare for serious allergic reactions in two ways:

- By identifying at-risk students, and alerting staff about the students and their allergens. This would include developing an Individualized Health care Plan (IHP) in order to outline the modifications and/or restrictions planned for that student (e.g., providing their own snacks in order to avoid possible peanuts or peanut oil in baked goods brought by other students or parents). The IHP should also include an Emergency Care Plan (ECP), which would outline the plan to be followed in case of a severe reaction. (Please see “The Individualized Healthcare Plan” in Chapter 7 of this manual for further discussion of IHPs; see its appendix for a sample IHP).
- By developing policies and procedures that elaborate how the school will deal with an allergic reaction in a student without a known allergy, and therefore without an IHP. This may include standing medical orders regarding the use of emergency epinephrine, EMS activation plans, teacher and other school personnel training, or the implementation of policies regarding what foods and snacks will be prepared by, and/or allowed into the school setting.<sup>27,28</sup> (Please see Exhibit 3 of this section for a legal discussion of standing medical delegation).

It is an unfortunately common misconception that anaphylaxis will not occur unless a previous and milder allergic reaction has already taken place. According to the American Academy of Allergy, Asthma and Immunology (AAAAI), milder reactions do not necessarily precede a fatal or near-fatal reaction, and some reactions will progress so rapidly that there will not be enough time to obtain medical attention. Studies have demonstrated that delays or failures to use epinephrine when indicated have contributed



to fatal outcomes to both insect stings and food. This evidence also shows that insect sting and food reactions are more likely to occur away from the victim's home, e.g., at school, and that the severe reactions occur despite the patient's best efforts to avoid exposure. It is for these reasons, among others, that the AAAAI suggests that "everyone is a potential victim of anaphylaxis," and has included these recommendations in its most recent revisions of its position statement regarding emergency epinephrine use:

Epinephrine for injection should be included in all emergency medical treatment kits such as those in ... schools ... and other public facilities. Such kits are meant for use by trained personnel who can evaluate on the scene the indication, benefit, and risk of treatment with epinephrine ....

It would be optimal for epinephrine to be available in all schools for use by nurses or trained individuals to administer to students or staff presumed to be having an anaphylactic reaction. School nurses and other supervisory personnel should receive periodic in-service training concerning anaphylaxis, the proper use of epinephrine, the importance of emergency procedures and physician notification after the injection, and proper record keeping.<sup>29</sup>

All teachers and school personnel who have contact with allergic students must be aware of students who may require epinephrine treatment. Aids could include identification sheets with the child's name, photograph, specific allergy (e.g., peanut or bee sting), warning signs of reaction, and emergency treatment. This information should be readily available and reviewed by all caregivers. (Please see "Epinephrine Protocol" in Chapter 5 of this manual.) School nurses are in an excellent position to carry out allergy assessments on students, coordinate information with the affected students' primary health care providers and/or allergists, work with the families of allergic students regarding special considerations that may need to be taken (e.g., with diet), and train school personnel in the nature and treatment of allergic reactions. Schools and districts should obtain the input of the school nurse in developing both IHPs and generalized school readiness plans.<sup>30</sup> The importance of this last point cannot be overstated—a recent study conducted in Michigan revealed that many schools were not prepared for allergic reactions, as evidenced by "lack of structured, school-wide education ...; deficiencies in [allergen] avoidance strategies ...; lack of written emergency action plans; and lack of easy access to epinephrine."<sup>31</sup> Proper planning and coordination by informed members

of the school health care team can dramatically reduce the severity of allergic reactions at school.

School personnel may develop a poster or chart listing the major causes of severe allergic reactions (food, insect stings, latex) and outlining the common signs and symptoms associated with anaphylaxis. This chart can be posted in various locations throughout the school (cafeteria, classrooms, playground, bus), and can be individualized by location to include the site of the nearest emergency epinephrine and/or the name and phone extension or room number of the school nurse or other trained health care staff. Schools are encouraged to be creative and adapt their posters to their particular environment, but all should include the following:

Common Signs and Symptoms of an Allergic Reaction may include one or a combination of any of the following:

- Hives
- Itching (any part of the body)
- Swelling (any part of the body)
- Red and/or watery eyes
- Runny nose
- Vomiting
- Diarrhea
- Stomach cramps
- Change of voice
- Coughing
- Sneezing
- Wheezing, including an acute asthma episode
- Throat tightness or closing
- Difficulty swallowing
- Difficulty breathing
- Sense of doom
- Dizziness
- Fainting or loss of consciousness
- Change of color<sup>32</sup>

**A person may exhibit any or all of the above signs and symptoms within a few minutes, or the reaction may be delayed for up to a few hours. If a person is known to have a severe sensitivity and severe allergic reactions, don't wait for signs and symptoms to become worse! Call for an ambulance as soon as possible!**

Watch for:

- **Skin:** Cold to touch (may be clammy and moist), itching, hives, swelling of the lips
- **Color:** Pale at first, then mottled or bluish
- **Breathing:** Wheezy, change in voice quality, fullness in throat, breathing may stop
- **Pulse:** Rapid, weak
- **Blood Pressure:** Low, progressively lower, or unable to hear
- **Other:** Restlessness, severe headache, loss of consciousness, swelling of eyelids<sup>33</sup>

All students who have been treated with emergency epinephrine should be transported to the nearest tertiary care facility for evaluation. Studies have demonstrated that anaphylaxis can occur in “waves,” with a second—and still potentially fatal—episode occurring up to several hours after an affected individual appears to have recovered (whether epinephrine was administered or not).<sup>34</sup> As stated in the “Epinephrine Protocol” (Chapter 5, *Medication Administration*), school personnel who have been trained in emergency interventions (preferably the school nurse) should accompany the student, as continued monitoring will be necessary.

All individuals entrusted with the care of children need to have familiarity with basic first aid and resuscitative techniques. This should include additional formal training on how to use epinephrine auto-injector devices. Policies for treating anaphylaxis should be implemented. Educational material is available from The Anaphylaxis Project of the Allergy Asthma Information Association and from other organizations listed in Exhibit 4 of this chapter. Schools can use these resources to find samples of everything they might need for policy development, from letters home to parents about snacks, to consent forms for parents and health care providers regarding emergency epinephrine use. It is strongly recommended that schools and districts develop policies and procedures regarding the treatment of severe allergic reactions, and that these are discussed with students,

parents/guardians, health care providers, and school staff in ways that convey the nature of allergic reactions, the roles that each individual can play in reducing the risks of these reactions at school, and the seriousness and immediacy with which a potential severe allergic reaction needs to be handled. Schools should take advantage of members of their community who may be able to assist with school-wide trainings and information sharing, and can also utilize the resources at the end of this section for professional and organized assistance.

## **Common Types of Allergic Reactions and Strategies to Reduce Allergic Responses**

### **Food**

The foods that commonly produce allergy problems are cow's milk, soy, eggs, wheat, fish, shellfish, peanuts, and other tree nuts (e.g., almonds, cashews, Brazil nuts). Reactions to peanuts, nuts, and shellfish are a lifelong problem and are usually more severe than allergic responses to other foods. Most individuals with allergic reactions to milk, soy, egg, and wheat lose their sensitivity by the time they are in high school; however, there are still some that will continue to run the risk of anaphylaxis from these foods.<sup>35</sup> It is estimated that up to 2 million, or 8%, of U.S. children are affected by a food allergy.<sup>36</sup>

Some children are so allergic that even cleaning the top of their desk or table with a cloth that has touched the allergen can trigger an allergic response. Use a fresh cloth or paper towel when cleaning the allergic child's table to avoid cross-contamination from a sponge or cloth that was used to clean allergen-containing table tops.<sup>37</sup>

Despite best intentions toward avoidance and cleansing, many children will accidentally ingest or come into contact with a food allergen while at school. In this case, the school staff needs to be familiar with the signs and symptoms of an allergic reaction (see above), and needs to be trained in how to access staff trained in emergency interventions and/or in activating the EMS. Students experiencing a severe allergic reaction, if previously identified as allergic, should have an Emergency Care Plan (ECP) in place, and the school should follow the plan developed for that student (See Exhibit 7). This plan should include the administration of emergency epinephrine, and the student should have medication designated for him/her that is accessible to school staff. Students without known history of food allergy will most likely not have an ECP, and treatment of these

students should be per school or district policy regarding administration of emergency epinephrine vs. activation of EMS only.

### **School guidelines for dealing with students with food allergies<sup>38</sup>**

Food allergies can be life-threatening. The risk of accidental exposure to foods can be reduced in the school setting if schools work with students, parents, and physicians to minimize risks and provide a safe educational environment for food-allergic students.

#### **Family's Responsibility**

- Notify the school of the child's allergies.
- Work with the school team to develop a plan that accommodates the child's needs throughout the school including in the classroom, in the cafeteria, in after-care programs, during school-sponsored activities, and on the school bus, as well as a Food Allergy Action Plan.
- Provide written medical documentation, instructions, and medications as directed by a physician, using the Food Allergy Action Plan as a guide.
- Include a photo of the child on written form.
- Replace medications after use or upon expiration.
- Educate the child in the self-management of their food allergy including:
  - Safe and unsafe foods;
  - Strategies for avoiding exposure to unsafe foods;
  - Symptoms of allergic reactions;
  - How and when to tell an adult they may be having an allergy related problem; and
  - How to read food labels (age appropriate)

- Review policies/procedures with the school staff, the child's healthcare provider and the child (if age appropriate) after a reaction has occurred.

#### School's Responsibility

- Be knowledgeable about and follow applicable federal laws including ADA, IDEA, Section 504, and any state laws or district policies that apply.
- Review the health records submitted by parents and physicians.
- Include food-allergic students in school activities. Students should not be excluded from school activities solely based on their food allergy.
- Identify a core team that includes, but is not limited to, the school nurse, teacher, principal, school food service and nutrition manager/director, and counselor (if available) to work with parents and the student (age appropriate) to establish a prevention plan. Changes to the prevention plan to promote food allergy management should be made with core team participation.
- Assure that all staff who interact with the student on a regular basis understand food allergy, can recognize symptoms, knows what to do in an emergency, and work with other school staff to eliminate the use of food allergens in the allergic student's meals, educational tools, arts and crafts projects, or incentives.
- Practice the Food Allergy Action Plans before an allergic reaction occurs to assure the efficiency/effectiveness of the plans.
- Coordinate with the school nurse to be sure medications are appropriately stored, and be sure that an emergency kit is available that contains a physician's standing order for epinephrine. Keep the medications easily accessible in a secure location central to designated school personnel.

- Designate school personnel who are properly trained to administer medications in accordance with the State Nursing Practice Act and Good Samaritan Laws governing the administration of emergency medications.
- Be prepared to handle a reaction and ensure that there is a staff member available who is properly trained to administer medications during the school day regardless of time or location.
- Review policies/prevention plan with the core team members, parents/guardians, student (age appropriate), and healthcare provider after a reaction has occurred.
- Work with the district transportation administrator to assure that school bus driver training includes symptom awareness and what to do if a reaction occurs.
- Recommend that all buses have communication devices in case of an emergency.
- Enforce a "no eating" policy on school buses with exceptions made only to accommodate special needs under federal or similar laws, or school district policy. Discuss appropriate management of food allergy with family.
- Discuss field trips with the family of the food-allergic child to decide appropriate strategies for managing the food allergy.
- Follow federal/state/district laws and regulations regarding sharing medical information about the student.
- Take threats or harassment against an allergic child seriously.

#### Student's Responsibility

- Should not trade food with others.

- Should not eat anything with unknown ingredients or known to contain any allergen.
- Should be proactive in the care and management of their food allergies and reactions based on their developmental level.
- Should notify an adult immediately if they eat something they believe may contain the food to which they are allergic.

More detailed suggestions for implementing these objectives and creating a specific plan for each individual student in order to address his or her particular needs are available in The Food Allergy & Anaphylaxis Network's (FAAN) School Food Allergy Program. The School Food Allergy Program has been endorsed and/or supported by the Anaphylaxis Committee of the American Academy of Allergy Asthma and Immunology, the National Association of School Nurses, and the Executive Committee of the Section on Allergy and Immunology of the American Academy of Pediatrics. FAAN can be reached at: 800/929-4040, and is listed in Exhibit 4 of this chapter.

This following organizations participated in the development of the above section:

American School Food Service Association  
National Association of Elementary School Principals  
National Association of School Nurses  
National School Boards Association  
The Food Allergy & Anaphylaxis Network

**Food Intolerance.** A condition often characterized by gastrointestinal symptoms and discomfort is not the same as a food allergy. It may occur because the body lacks a particular enzyme to break down a particular food (e.g., milk). Management of food intolerance consists of providing missing enzymes to the body, and/or avoiding the foods known to be culprits.<sup>39</sup>



**Insect/Bee Stings**

Approximately 50 anaphylactic insect sting deaths are recognized each year in the United States. The incidence of insect sting anaphylaxis in the United States is 0.5 – 3%.<sup>40</sup> The nurse (or school) needs to carefully assess all students regarding their risk for this type of allergic reaction. This assessment should include: a thorough history of reactions to insect bites and stings in the past, what types of care were needed and received, and whether there are coexisting allergies. Any reaction to a previous sting that resulted in a local skin reaction (e.g., hive or wheal), or worse, is reason to consider a student at risk for allergic anaphylaxis in the future. If the student or the family is unsure, they should be referred to an allergist for evaluation.

Avoidance of insect stings is more difficult to achieve than foods but certain precautions can help to reduce the risk of stings to allergic students. These include:

- Removal of any and all insect nests on or near school property;
- Proper storage of garbage in well-covered containers; and
- Restriction of eating areas to inside school buildings; in particular, avoidance of open soft drink cans when out of doors.<sup>41</sup>

Complete avoidance of insect stings is next to impossible, especially when outdoors. Field trips and recess are situations in which school personnel need to be aware of the possibility of an allergic reaction to a sting. Students with a history of allergies to insect stings should be identified at the beginning of the school year, or when the allergy developed, and should have an IHP that includes an Emergency Care Plan (ECP; see Exhibit 7 of this chapter). This ECP will detail the plan agreed upon by staff, and the student's primary provider and family, should a severe allergic reaction occur. It should include the administration of emergency epinephrine, and a kit with the student's name on it should be accessible to school staff. Activation of EMS and notification of the student's parent/guardian and healthcare provider should also take place. Severe allergic reactions to insect stings in students who have not been previously identified should be treated per school or district policy regarding the administration of emergency epinephrine in these individuals.

**Latex**

Latex is a milky, organic substance produced by rubber trees. Latex allergies are a relatively new and increasingly frequent problem. The reasons for this are not clear, but may include the increased use of latex gloves and products over the past decade leading to greater sensitization of the public. Children who are exposed to latex products early and repeatedly, usually children with severe chronic health disorders (e.g., spina bifida) can have a risk of latex allergy that approaches 50%.<sup>42</sup>

Allergy to latex often presents as a simple and local contact dermatitis, i.e., a rash on the skin that has been in contact with the latex product. This allergy appears to be related to some of the chemicals used in the process of manufacturing latex, and should be treated with topical agents. It is not life-threatening on its own. IgE antibody-mediated allergic reactions to latex, however, are *systemic* (affecting the whole body) and need to be treated accordingly.

The severity of the immediate reaction depends on the person's degree of sensitivity and the amount of latex allergen in the body. The greatest danger of severe reactions occurs when latex comes into contact with moist areas of the body, such as the lips, because more allergen can rapidly be absorbed by the mucous membranes. Latex can also become airborne when the latex adheres to the cornstarch powder used on gloves. If inhaled, or contacted by the eyes or nose, respiratory symptoms can result in a person who has previously been sensitized.

School nurses should evaluate any student with a latex allergy for reactions to certain foods as well. Bananas, avocados, kiwi fruit, and European chestnuts contain some of the same allergens present in latex, and therefore may cause a cross-reaction if consumed or encountered. Gloves ordered for school nurses to use with special needs students should be made without latex to avoid the risk of latex allergy reaction.

Systemic reactions to latex should be treated in the same way that systemic food or insect sting allergic reactions are treated with emergency epinephrine (please see Chapter 5, *Medication Administration*, for the Epinephrine Protocol). Policies should address both the treatment of potentially life-threatening allergic reactions to latex, as well as opportunities for the school to reduce the risk of its occurrence in the school setting.<sup>43</sup>

## Emergency Procedures: Heat-Related Illnesses

Although heat-related illnesses are more common among athletes and those who spend a great deal of time outdoors, anyone is susceptible to a heat-related illness. It is important that all staff and students are aware of heat-related illnesses and ways to prevent and treat them.

### Prevention

The best defense against heat-related illnesses is to prevent them from occurring. Following are the Center for Disease Control and Prevention's (CDC) "Tips on Preventing and Managing Heat":<sup>44</sup>

- Drink more fluids (nonalcoholic), regardless of your activity level. Don't wait until you're thirsty to drink. Warning: If your doctor generally limits the amount of fluid you drink or has you on water pills, ask him or her how much you should drink while the weather is hot.
- Don't drink liquids that contain caffeine, alcohol, or large amounts of sugar—these actually cause you to lose more fluid. Also avoid very cold drinks because they can cause stomach cramps.
- Stay indoors and, if at all possible, stay in an air-conditioned place. Even a few hours spent in air conditioning can help your body stay cooler when you go back into the heat. Call your local health department to see if there are any heat-relief shelters in your area.
- Electric fans may provide comfort, but when the temperature is in the high 90s, fans will not prevent heat-related illness. Taking a cool shower or bath, or moving to an air-conditioned place is a much better way to cool off.
- Wear lightweight, light-colored, loose-fitting clothing.
- NEVER leave anyone in a closed, parked vehicle.
- Although anyone at any time can suffer from heat-related illness, some people are at greater risk than others. Check regularly on: infants and young children, people aged 65 or older, people who have a mental illness, and those who are physically ill, especially with heart disease or high blood pressure.

If you must be out in the heat:

- Limit your outdoor activity to morning and evening hours.
- Cut down on exercise. If you must exercise, drink two to four glasses of cool, nonalcoholic fluids each hour. A sports beverage can replace the salt and minerals you lose in sweat. Warning: If you are on a low-salt diet, talk with your doctor before drinking a sports beverage. Remember also not to drink fluids that are high in sugar.
- Try to rest often in shady areas.
- Protect yourself from the sun by wearing sunglasses, a wide-brimmed hat, which will keep you cooler, and by putting on sunscreen of SPF 15 or higher. (The most effective products say “broad spectrum” or “UVA/UVB protection” on their labels.)

## **Temperature Overload<sup>45</sup>**

People suffer heat-related illness when their bodies are unable to compensate and properly cool themselves. The body normally cools itself by sweating, but under some conditions, sweating isn’t enough. In such cases, a person’s body temperature rises rapidly. Very high body temperatures may damage the brain or other vital organs or even cause death.

Several factors affect the body’s ability to cool itself during extremely hot weather. When the humidity is high, sweat will not evaporate as quickly, preventing the body from releasing heat quickly. Other conditions related to risk include age (the elderly and young children), obesity, fever, dehydration, heart disease, mental illness, poor circulation, sunburn, and prescription drug use and alcohol use.

Summer time activities must be balanced with measures that aid the body’s cooling mechanisms and prevent heat-related illness.

## **Hot Weather Emergencies<sup>46</sup>**

Even short periods of high temperature can cause serious health problems. Two common problems are heat stroke and heat exhaustion. Others include heat rash and heat cramps.

**Heat Stroke**

Heat stroke occurs when the body is unable to regulate its temperature. The body's temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. Body temperature may rise to 106 degrees Fahrenheit or higher within 10-15 minutes. Heat stroke can cause death or permanent disability if emergency treatment is not provided.

**Warning signs of heat stroke may include the following:**

- An extremely high body temperature (above 103 degrees Fahrenheit, orally);
- Red, hot, and dry skin (no sweating);
- Rapid, strong pulse;
- Throbbing headache;
- Dizziness;
- Nausea;
- Confusion; and
- Unconsciousness.

If you see these signs, you may be dealing with a life-threatening emergency. Have someone call for immediate medical assistance while you begin cooling the victim. Do the following:

1. Get the victim to a shady area.
2. Cool the victim rapidly using whatever methods you can. For example, immerse the victim in a tub of cool water; place the person in cool water; or if the humidity is low, wrap the victim in a cool, wet sheet and fan him or her vigorously.
3. Monitor body temperature, and continue cooling efforts until the body temperature drops to 101-101 degrees Fahrenheit.
4. If emergency medical personnel are delayed, call the hospital emergency room for further instruction.
5. Do not give the victim alcohol to drink.
6. Get medical assistance as soon as possible.

Sometimes a victim's muscles will begin to twitch uncontrollably as a result of a stroke. If this happens, keep the victim from injuring him or herself, but do not place any object in the mouth and do not give fluids. If there is vomiting, make sure the airway remains open by turning the victim on his or her side.

### **Heat Exhaustion**

Heat exhaustion is a milder form of heat-related illness that can develop after several days of exposure to high temperatures and inadequate or unbalanced replacement of fluids. Those most prone to heat exhaustion are elderly people, people with high blood pressure, and people working or exercising in a hot environment.

#### **Warning signs of heat exhaustion include the following:**

- Heavy sweating
- Paleness
- Muscle cramps
- Tiredness
- Weakness
- Dizziness
- Headache
- Nausea or vomiting
- Fainting.

The skin may be cool and moist. The victim's pulse rate will be fast and weak, and breathing will be fast and shallow. If heat exhaustion is untreated, it may progress to heat stroke. Seek medical attention immediately either if symptoms are severe, or the victim has heart problems or high blood pressure. Otherwise, help the victim to cool off, and seek medical attention if symptoms worsen or last longer than 1 hour.

**What to do.** Cooling measures that may be effective include the following: Cool, nonalcoholic beverages, as directed by a healthcare provider; rest; cool shower, bath, or sponge bath; an air-conditioned environment; and lightweight clothing.

**Heat Rash**

Heat rash is a skin irritation caused by excessive sweating during hot, humid weather. It can occur at any age but is most common in young children.

**Recognizing Heat Rash.** Heat rash looks like a red cluster of pimples or small blisters. It is more likely to occur on the neck and upper chest, in the groin, under the breasts, and in elbow creases.

The best treatment for heat rash is to provide a cooler, less humid environment. Keep the affected area dry. Dusting powder may be used to increase comfort, but avoid using ointments or creams—they keep the skin moist and may make the condition worse. Treating heat rash is simple and usually does not require medical assistance.

**Heat Cramps**

Heat cramps usually affect people who sweat a lot during strenuous activity. This sweating depletes the body's salt and moisture. The low salt level in the muscles causes painful cramps. Heat cramps may also be a symptom of heat exhaustion.

Heat cramps are muscle pains or spasms – usually in the abdomen, arms, legs – that may occur in association with strenuous activity. If a person has heart problems, or is on a low-sodium diet, medical attention is necessary for heat cramps.

If medical attention is not necessary, take these steps:

1. Stop all activity, and sit quietly in a cool place.
2. Drink clear juice or a sports beverage.
3. Do not return to strenuous activity for a few hours after the cramps subside, because further exertion may lead to heat exhaustion or heat stroke.
4. Seek medical attention for heat cramps if they do not subside in 1 hour.

## Emergency Procedures: Cardiac Arrest

Although sudden cardiac deaths occur more commonly in adults, an estimated 5,000 to 7,000 children without symptoms die suddenly in the United States annually. Current research suggests that the vast majority of sudden cardiac deaths in children and adolescents are directly related to undetected cardiac anomalies.

Cardiac arrest is an abrupt disruption of the heart function causing lack of blood flow to vital organs. Abnormal heart rhythms are the cause of most cardiac arrests. Ventricular fibrillation, a specific type of chaotic heart rhythm, is the most common abnormal rhythm associated with cardiac arrest. The treatment for ventricular fibrillation is defibrillation—shocking the heart into a regular rhythm. Untreated cardiac arrest due to ventricular fibrillation ultimately leads to cardiac death.<sup>47</sup>

The emergency response to cardiac arrest includes early access to emergency medical care, cardiopulmonary resuscitation (CPR), early defibrillation, and early advanced cardiac life support. A new generation of defibrillators, called automated external defibrillators (AEDs) makes it possible for trained lay rescuers to deliver defibrillation.

## Causes of Cardiac Death in Children and Adolescents

The most common cardiac causes of sudden death are specific conditions present at birth. These include:

- Hypertrophic cardiomyopathy (enlargement of the heart);
- Congenital coronary artery anomalies (the blood vessels around the heart are abnormal);
- Aortic stenosis (narrowing);
- Other heart abnormalities; and
- Dysrhythmias (abnormal heart rhythms).<sup>48</sup>

Sudden death may also occur in young sports participants, with normal hearts, when a projectile strikes the child in the chest. This phenomenon is termed *commotio cordis* (heart concussion) and predominantly affects children and adolescents 5 to 15 years of age without preexisting heart disease. *Commotio cordis* has been reported in baseball, ice



hockey, lacrosse, softball, and as a consequence of fistfights. This is a very rare cause of sudden death resulting in 45 reported deaths annually.

It is also important to note that abnormal cardiac rhythms can result from body fluid problems. Two examples include:

- Sweating routines to achieve rapid weight loss; and
- Dehydration resulting from anorexia or bulimia nervosa.<sup>49</sup>

### **Risks for Sudden Cardiac Death in Schools**

In general, children and adolescents are at low risk for sudden cardiac arrest. Cardiac arrest in children and adolescents has usually been attributed to respiratory causes rather than heart factors. However, cardiologists are beginning to think that ventricular fibrillation in children may be more common than previously thought. Sudden death related to undetected cardiac anomalies appears to occur most often among high school athletes. There are approximately 12 deaths per year in U.S. high school athletes.

### **Treatment of Sudden Cardiac Arrest**

The American Heart Association (AHA) has developed a “chain of survival” that provides a framework for emergency response to cardiac events. It involves:

- Early Access – to emergency medical care through 911 or other emergency numbers;
- Early Cardiopulmonary Resuscitation (CPR) – to provide oxygen to vital organs, including the brain;
- Early Defibrillation – to return the heart to its normal rhythm; and
- Early Advanced Cardiac Life Support – to stabilize the victim.<sup>50</sup>

Sudden cardiac arrest in children and adolescents can lead to ventricular fibrillation. During ventricular fibrillation, the heart’s electrical impulses become chaotic and the heart no longer pumps blood effectively. Defibrillation is the definitive treatment that treats ventricular fibrillation and restores a functional heart rhythm. When a person suffers a sudden cardiac arrest, their chance of survival decreases by 7 to 10 percent for each minute that passes without defibrillation

Public access defibrillation programs allow trained lay people to use an automated type of defibrillator in combination with CPR. An automated external defibrillator (AED) is a device used to administer electric shock through the chest wall to the heart. Built-in computers assess the individual's heart rhythm, judge whether defibrillation is needed, and then administer the shock. Audible and/or visible prompts guide the user through the process.<sup>51</sup>

Some medical experts suggest that the use of this new technology might increase the initial survival rate of cardiac arrest victims from 2% to as much as 40%. However, others urge caution in applying experience with AEDs and early defibrillation in adults to its use in children. AEDs, for example, are not to be used on children under the age of eight, or children under 80 pounds.

The National Association of School Nurses (NASN) has issued a policy statement on the use of AEDs in school. The NASN points out that the majority of sudden death in children occurs from respiratory arrest, not cardiac arrest, and that school policies developed for the use of AEDs will need to include “the development of intense training programs, the purchase of costly equipment, provisions for maintenance and replacement equipment, and continued supervision of trained personnel,”<sup>52</sup> the risks of which may not outweigh the benefits. Their conclusion, based on these concerns, is that schools should utilize AEDs only after careful consideration of the following:

- Federal, state and local laws;
- Factors related to safety, effectiveness, and cost;
- Clear training and guidelines for the use of AEDs in the school setting;
- Location, access, and availability of AEDs;
- The necessity of CPR certification and emergency response skills;
- Identification and resolution of liability issues; and
- Data supporting the effectiveness of these devices in the school setting.<sup>53</sup>

With or without the presence of AEDs in the school setting, however, any instance of cardiac arrest on school grounds, in a student or staff member, will require that trained school personnel perform cardiopulmonary resuscitation (CPR), and that the emergency management system (EMS) is activated. School personnel can use the following list as a guideline for assessing whether a heart attack should be suspected:

- Any chest pain that is severe, lasts longer than 10 minutes, or persists during rest;
- Persistent pain or pressure in the chest that is not relieved by resting, changing position, or prescribed oral medication;
- Pain ranges from discomfort to unbearable crushing pain behind the breastbone, described as dull, penetrating, pressure, squeezing;
- Pain, sometimes radiating down left arm, both arms, or neck;
- Feeling of choking;
- Agitation and apprehension;
- Breathing that is noisy, faster than normal;
- Shortness of breath;
- Pulse faster or slower than normal, or irregular;
- Skin pale or bluish;
- Face moist; and/or
- Cold sweat.

Severe cardiac arrest will include any or all of the above, with:

- Loss of pulse (heartbeat);
- Severe difficulty, or loss of breathing; and/or
- Sudden, severe chest pain.<sup>54</sup>

School personnel should understand that with any of the above signs or symptoms, EMS should be activated, and they should request **Advanced Life Support (ALS)**. While waiting, do the following:

- Remain with the individual until emergency personnel arrive.
- Place the person in a comfortable position, usually sitting up, particularly if there is difficulty breathing. The person's preference is generally a good guide.
- Loosen tight clothing.
- Provide reassurance.
- Guard against drafts and exposure to cold air; provide shade in extreme heat (to decrease physiological stressors).

- If individual has “heart medicine” with them or in the clinic, assist with taking it. (For a student, consult the written IHP, if present, and proceed with the physician’s recommendations).
- **Do not** give food, drink, or any medication to an unconscious individual.
- **Do not** attempt to transport individual, unless absolutely necessary.
- If necessary, certified personnel should start Rescue Breathing or cardiopulmonary resuscitation (CPR).
- Call parent or emergency contact.<sup>55</sup>

Individuals must be trained and certified to perform CPR. In Texas, athletic coaches are the only school personnel required to maintain this certification, although many registered nurses also maintain their certification. Anyone certified in CPR may also become certified as a CPR instructor, and provide classes to both students and staff. School nurses could provide this service to staff. The above sections have discussed other ways in which schools can ensure that there will always be someone on site who is certified to perform CPR. In the case where there is not, schools must rely on activating EMS, and follow the above guidelines while waiting for emergency personnel to arrive.

## The Law

Chapter 779, Health and Safety Code, allows for the use of AEDs by lay persons, as long as training is supervised both by a physician and by the Texas Department of Health. The full text of Chapter 779 is included in Appendix A of this manual for schools and districts to consult, should they wish to consider making AEDs available in their schools. It is important to note that Section 779.004, Health and Safety Code, states that:

A person or entity that provides emergency care to a person in cardiac arrest by using an automated external defibrillator shall promptly notify the local emergency medical services provider.<sup>56</sup>

The most important training for all school staff and personnel should be how to activate the Emergency Medical System (EMS) as quickly and efficiently as possible. This training can be done by a school nurse, a medical advisor or consultant to the school district, or by the local EMS themselves. All school staff should be aware of the location of the nearest phone, the physical address of the school building(s) in which they work,

and the number of the phone(s) nearest to them. Training in activation of EMS can provide staff unfamiliar with medical emergencies with some basic information that may increase both their confidence and their skills. AEDs and/or the performance of CPR in a cardiac emergency should NEVER replace dialing 911.

## **Out-of-Hospital Do Not Resuscitate Orders**

As more children with life-threatening medical problems are enrolled in school, school personnel must deal with the challenges involved with their care. When families have chosen to limit resuscitative efforts, school officials must be prepared to confront the possibility of death while the child is in school and develop protocols necessary to handle the situation in the best interest of the child, the staff, and the other children who attend school.

When families have decided they do not want resuscitative efforts performed on their child, usually because the medical condition is too far advanced to expect recovery and death is imminent, they may request a Do Not Resuscitate (DNR) order. A DNR order informs health care professionals that the family does not want resuscitative efforts performed if the child has a cardiac or respiratory arrest. If there is a child with a DNR order enrolled in school, the American Academy of Pediatrics<sup>57</sup> recommends that pediatricians and parents of the child meet with school officials, including nursing personnel, teachers, administrators, and EMS personnel, to determine the goals of in-school medical intervention and the best means to implement these goals. The National Association of School Nurses recommends that each student with an out-of-hospital DNR order should have an individualized health care plan (IHP) and an emergency plan. These plans should be developed by the school nurse in consultation with the parents, administrators, teachers, physicians, legal counsel, and the student, when appropriate.<sup>58</sup> A plan for school care should be devised and reviewed at least every six months or when the child's condition changes. These plans should be reviewed with the local school board.

Each school should develop a protocol for dealing with a dying child. It should include:

- Designating a place at school to hold the body temporarily;

- Notifying the medical examiner's office when a child with a DNR order is enrolled in school and prearranging with that office in case they need to send someone to the school to confirm the death;
- Making arrangements with the local emergency medical service if they will agree to transport the body;
- Verifying that the DNR order has been executed in proper compliance with existing law; and
- Arranging with the family which mortuary is to be called if the parents cannot be reached, and, if necessary, arranging with the mortuary to use a vehicle that does not resemble a hearse.<sup>59</sup>

## Legal Background

In 1999 the Texas Legislature enacted the Advance Directives Act (Chapter 166, Health and Safety Code),<sup>60</sup> which includes provisions for out-of-hospital DNR orders. An out-of-hospital DNR order is a legally binding out-of-hospital do-not-resuscitate order, in the form specified by the Texas Board of Health and prepared and signed by the attending physician of that person, that documents the instructions of a person or the person's legally authorized representative and directs health care professionals acting in an out-of-hospital setting not to initiate or continue the following life-sustaining treatment:

- Cardiopulmonary resuscitation;
- Advanced airway management;
- Artificial ventilation;
- Defibrillation; or
- Transcutaneous cardiac pacing.

A DNR order does not prevent medical interventions or therapies considered necessary to provide comfort care, alleviate pain, or provide water or nutrition.

A written out-of-hospital DNR order shall be in the standard form specified by the Texas Board of Health. (See Exhibit 7 for the TDH DNR Order form and instructions in English and Spanish.) ***An out-of-hospital DNR order is a legal document—a note from a parent does not constitute an out-of-hospital DNR order.*** A child's parents, legal guardian, or managing conservator may execute an out-of-hospital DNR order for a child under the age of 18.

## Honoring a DNR Order

When responding to a call for assistance, health care professionals shall honor an out-of-hospital DNR order if:

- The health care professionals discover an executed or issued out-of-hospital DNR order form; or
- The person is wearing a DNR identification device.

The presence of a DNR identification device on the body of a person is conclusive evidence that the person has executed or issued a valid out-of-hospital DNR order. The Texas Department of Health has set the following requirements for an out-of-hospital DNR identification device:

- An intact, unaltered, easily identifiable plastic identification OOH DNR bracelet, with the word “Texas” (or a representation of the geographical shape of Texas with the word “STOP” imposed over the shape) and the words “Do Not Resuscitate”; or
- An intact, unaltered, easily identifiable metal bracelet or necklace inscribed with the words “Texas Do Not Resuscitate – OOH.”<sup>61</sup>

Personnel may accept an out-of-hospital DNR order or device that has been executed in another state if there is no reason to question the authenticity of the order or device. If there are any indications of unnatural or suspicious circumstances, the health care provider shall begin resuscitation efforts until a physician directs otherwise.

If the patient is transported, an original copy of the DNR order shall be transported with the patient. Copies of the DNR order may be put on file with concerned parties.

An out-of-hospital DNR order is valid and shall be honored by health care professionals *unless*:

- The person(s) found at the scene identify themselves as the declarant or as the attending physician, legal guardian, qualified relative, or agent of the

person having a medical power of attorney who executed the out-of-hospital DNR order on behalf of the person; and

- That person requests that life-sustaining treatment be initiated or continued.<sup>62</sup>
- A person may not withhold life-sustaining treatment from a person known to be pregnant.

The desire of a competent person, including a competent minor, supersedes the effect of an out-of-hospital DNR order executed or issued on behalf of the person when the desire to receive life-sustaining assistance is communicated to responding health care professionals. "Competent" means possessing the ability, based on reasonable medical judgment, to understand and appreciate the nature and consequences of a treatment decision, including the significant benefits and harms of and reasonable alternatives to a proposed treatment decision.

Honoring an out-of-hospital DNR order by withholding life-sustaining treatment does not constitute the offense of aiding suicide.<sup>63</sup> Additionally, the state of Texas does not condone, authorize, or approve mercy killing or permit an affirmative or deliberate act or omission to end life except to permit the natural process of dying.<sup>64</sup>

A health care professional who in good faith causes cardiopulmonary resuscitation or other life-sustaining treatment to be withheld from a person in accordance with a DNR order or participates in withholding cardiopulmonary resuscitation or other life-sustaining treatment from a person in accordance with a DNR order is not civilly liable or criminally liable for that action or guilty of unprofessional conduct as a result of that action. A health care professional is not in violation of any other licensing or regulatory laws or rules of the state and is not subject to any disciplinary action or sanction by any licensing or regulatory agency of the state as a result of that action.<sup>65</sup>



## **DNR Order Record-keeping**

Records shall be maintained on each incident in which an out-of-hospital DNR order or DNR identification device is encountered by responding health care professionals, and the number of cases where there is an on-site revocation of the DNR order shall be recorded.<sup>66</sup> The data documented shall include:

- An assessment of the patient's physical condition;
- Whether an identification device or DNR form was used to confirm DNR status and patient identification number;
- Any problems relating to implementation of the DNR order;
- Name of the patient's attending physician; and
- Full name, address, telephone number, and relationship to patient of any witness used to identify the patient.

## **Secondary Prevention: Crisis Management and Responding to School Violence**

Violence in school is unpredictable. It can happen at any time, without warning. Safe schools are prepared for any crisis or act of violence. The ability to effectively respond to a crisis is an important component of an effective school violence prevention plan. It is important that all schools have a specific, well-documented and disseminated emergency response plan. A core team of individuals from the school and the community should be involved in creating and maintaining a crisis prevention and intervention protocol for every school. This plan must include interventions ensuring safety during a crisis as well as opportunities for support of victims, their families, others involved, and the community after a crisis event has occurred.

### **The Emergency Response Plan**

According to *Developing an Emergency Response Plan For Your School* (Massachusetts Statewide School Emergency Care Planning Council, 2000),<sup>67</sup> the following basic principles should be kept in mind when developing an emergency response plan:

- Aim for strong school and community partnerships in your short-term and long-term planning;
- Practice prevention by conducting regular needs assessments and evaluations of school safety;
- Develop response competence of school personnel and students through education, regular training, and drills; and
- Think about strengthening access to emergency services and management of the emergency scene until help arrives.

In addition, the components of an emergency response plan should include the following:

- **Recognition** that emergencies can happen at any time in any place;
- **Support of school administration** for emergency planning, through allocation of staff time and school resources;
- **Involvement of all stakeholders:** EMS, administrators, school nurses, school physicians, school staff, parents;
- **Adequate number of first aid-trained personnel** in the school at all times and knowledge of where they are located;
- **Assigned roles** for responsible persons;
- **Availability** of appropriate and serviceable **equipment and supplies**;
- **Adequate** and serviceable **communication** systems, e.g., dedicated telephone line, cell phones, pagers, bullhorn, 2-way radios;
- **Injury prevention** awareness/enhancement;
- **Protocols** for specific injuries and illnesses disseminated and posted;
- For each student a **signed emergency card** . . . which is available in an emergency and includes parent/guardian location, consent for treatment, special health care needs and medications, and medical and dental providers;
- Adequate **security**—building-specific, system-wide;
- Multiple casualty incident (**MCI**) **plan**;
- A method for incident **reporting** and documentation; and
- **Legal and insurance** concerns addressed; all plans should be reviewed by the school system's legal counsel.<sup>68</sup>

Examples of critical incident response plans can be obtained from the following sources:

Jonesboro, Arkansas Crisis Management Plan

<http://nettleton.crsc.k12.ar.us/crisis.htm>

Northeast Independent School District Crisis Management Plan

Northeast Independent School District

8961 Tesoro Drive

San Antonio, TX 78217

Phone: (210) 804-7000

<http://www.northeast.isd.tenet.edu>

## The Emergency Response Team

Creating and implementing a school-wide crisis management plan requires collaboration on the part of many. It is recommended that two emergency response teams (ERTs) be created at each school—one to cover situations that may occur during school hours and one to manages crises that may occur during after-school activities.<sup>69</sup> Members of the ERT should include:

- School nurses and school-based health center nurse practitioners
- School physicians
- Administrators
- EMS
- Counselors
- Teachers
- Coaches and Athletic Directors
- Secretaries
- Custodians
- Students (high school age)
- Parents
- Community hospital representatives
- Primary care physicians
- Public safety representatives

Tasks of the ERT should include the following:

1. Identify roles of all of the individuals and agencies involved in providing emergency care to the school community.
2. Determine the resources available to the school to prevent and respond to an emergency.
3. Develop policies and procedures for individual and group emergencies in the school.
4. Debrief school officials after an emergency and periodically evaluate the emergency plan's effectiveness.<sup>70</sup>

### Intervention During a Crisis

Crises of many different forms may occur during school including bomb threats or explosions, weapons use, fights, accidents, and natural disasters such as fire or tornado. Schools must be prepared to handle any contingency in a manner that controls chaos and reduces injury. The following *Crisis Procedure Checklist*<sup>71</sup> is an example of a step-by-step procedure for use in a crisis situation:

- \_\_\_Assess life/safety issues immediately.
- \_\_\_Provide immediate emergency medical care.
- \_\_\_Call 911 and notify police/rescue first. Call the superintendent second.
- \_\_\_Convene the crisis team to assess the situation and implement the crisis response procedures.
- \_\_\_Evaluate available and needed resources.
- \_\_\_Alert school staff to the situation.
- \_\_\_Activate the crisis communication procedure and system of verification.
- \_\_\_Secure all areas.

\_\_Implement evacuation and other procedures to protect students and staff from harm. Avoid dismissing student to unknown care.

\_\_Adjust the bell schedule to ensure safety during the crisis.

\_\_Alert persons in charge of various information systems to prevent confusion and misinformation. Notify parents.

\_\_Contact appropriate community agencies and the school district's public information office, if appropriate.

\_\_Implement post-crisis procedures.

## **The Role of the School Nurse**

The role of the school nurse during an emergency situation will vary among schools and ERTs. In general, the school nurse should be actively involved in assisting students and staff to safety, assessing physical injury, providing first aid, delegating aid as appropriate, and documenting care provided (see documentation section). The crisis management plan for each school should clearly outline the duties of the school nurse in the event of an emergency.

### **Aftermath**

As a member of the ERT, the school nurse should be actively involved in all aspects of the recovery from an emergency. The members of the ERT should be prepared to immediately implement post-crisis procedures following a crisis. They should have a good understanding of stress responses and post-traumatic stress disorder. They should also be knowledgeable of the variations in stress responses among different cultures, religions, and developmental stages and be prepared to provide support for these differing populations.<sup>72</sup> For example, "In the aftermath of tragedy, children may experience unrealistic fears of the future, have difficulty sleeping, become physically ill, and be easily distracted..."<sup>73</sup> Tasks of the ERT in the aftermath of a crisis may include:

- Helping parents understand children's reactions to violence;

- Helping teachers and other staff deal with their reactions to the crisis;
- Helping students and faculty adjust after the crisis;
- Helping victims and family members of victims re-enter the school environment; and/or
- Helping students and teachers address the return of a previously removed student to the school community (e.g., following return from a juvenile detention center).

The ERT is also responsible for disseminating information about the disaster to the community and the media and for documentation. The school nurse should be responsible for the documentation of any incidents involving injury or illness.

Documentation should include:<sup>74</sup>

- Name, address, telephone number, and date(s) of birth of the patient(s);
- Parent/guardian or contact person's name, address, and telephone number;
- Date, time, and place of injury or illness (which classroom, corridor, etc.);
- Brief description of injury/illness;
- Activity or circumstances at time of injury/illness;
- Person in charge when injury/illness happened;
- A list of witnesses;
- Type of treatment given at the school;
- Record of transport;
- Name, address, and telephone number of the receiving hospital or physician;
- Additional treatment given at the hospital or by the primary care physician (if known);
- Record of parents/guardian notification;
- Name of person who prepared and filed the report and the date; and
- Names of corroborating individuals (students, teachers).

### **Other Resources for Critical Incident Response Plans**

Crime Victims' Compensation Program  
Crime Victims' Services Division  
Office of the Attorney General  
P.O. Box 12198

Austin, TX 78711

Phone: (800) 983-9933

Fax: (512) 320 8270

E-mail: [crimevictims@oag.state.tx.us](mailto:crimevictims@oag.state.tx.us)

Law Enforcement Training Center

College of the Mainland

1200 Amburn Road

Texas City, TX 77591

Phone: (409) 938-1211

Fax: (409) 938-3146

Texas School Public Relations Association

1615 Guadalupe

Austin, TX 78701

Phone : (512) 474-9107

The Community Crisis Response Team Training Manual

U.S. Department of Justice, Office for Victims of Crime

<http://www.ojp.usdoj.gov/ovc/infores/crt/pdfwelc.htm>

The Institute for Trauma and Loss in Children

900 Cook Road

Grosse Pointe Woods, MI 48236

Phone: (877) 306-5256

Fax: (313) 885-1861

E-mail: [steele@tlcinst.org](mailto:steele@tlcinst.org)

<http://www.tlcinst.org>

The NEA Crisis Communication Guide and Toolkit

National Education Association

1201 16<sup>th</sup> Street, N. W.

Washington, DC 20036

Phone: (202) 822-7200

<http://www.nea.org>

National Organization for Victim Assistance

1757 Park Road NW

Washington, DC 20010

Phone: (800) TRY-NOVA

<http://www.nvc.org>

Office for Victims of Crime

Phone: (202) 307-5983

<http://www.ojp.usdoj.gov/ovc>



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